

We claim:

1. Isolated nucleic acid encoding hepatitis B virus rtA181V or rtA181T, or their complementary nucleic acids.

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2. The nucleic acid of claim 1 which is human hepatitis B virus.

3. The nucleic acid of claim 2 which is intact infectious virus.

10 4. The nucleic acid of claim 2 which is fused to heterologous nucleic acid.

5. The nucleic acid of claim 2 which is about from 10 to 35 base pairs.

6. Duck hepatitis B virus rtA181V or rtA181T.

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7. A duck infected with duck hepatitis B virus rtA181V or rtA181T

8. Woodchuck hepatitis virus rtA181V or rtA181T.

20 9. A woodchuck infected with woodchuck hepatitis virus rtA181V or rtA181T.

10. A vector comprising the nucleic acid of claim 1.

25 11. A host cell transformed with a vector of claim 10.

12. A method comprising culturing a host cell of claim 11 and recovering rtA181V or rtA181T therefrom.

13. A reverse transcriptase comprising (a) isolated hepatitis B virus rtA181V or rtA181T and/or (b) rtA181V and/or rtA181T fused to a heterologous polypeptide.

5 14. The reverse transcriptase of claim 13 bound to a detectable label, bound to an insoluble substance, or formulated in a pharmaceutically acceptable excipient.

15. The isolated reverse transcriptase of claim 13 in an infectious hepatitis B virus.

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16. An antibody capable of specifically binding rtA181V or rtA181T.

17. The antibody of claim 15 bound to a detectable label, bound to an insoluble substance or formulated in a pharmaceutically acceptable excipient.

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18. A method for immunotherapy comprising administering to a subject the isolated reverse transcriptase of claim 13.

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19. A method for immunotherapy comprising administering to a subject the antibody of claim 16.

20. A method for the treatment of HBV comprising administering adefovir to a subject infected with HBV, determining whether the subject is infected with HBV rtA181V or rtA181T and, if so, administering to the subject a non-cross reactive anti-HBV drug in addition adefovir.

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21. The method of claim 20 wherein the adefovir and the drug are administered substantially simultaneously to the subject.

22. The method of claim 20 wherein the drug is selected from the group consisting of entecavir, L-dT, MCC-478, FTC, L-dC, L-FMAU, L-Fd4C, Lamivudine and tenofovir.
- 5 23. A method for the prevention of emergence of rtA181V or rtA181T in a subject undergoing therapy for HBV comprising administering adefovir and at least one non-cross reactive anti-HBV drug.
- 10 24. The method of claim 23 wherein adefovir and the anti-HBV drug are administered substantially simultaneously.
- 15 25. A diagnostic PCR kit for HBV rtA181V or rtA181T comprising primers capable of specifically amplifying an HBV rt sequence containing rtA181V or rtA181T.
26. Isolated nucleic acid encoding hepatitis B virus reverse transcriptase sL173F or HBV sL172trunc, or their complementary sequences.
- 20 27. The nucleic acid of claim 26 which is human hepatitis B virus.
28. The nucleic acid of claim 27 which is intact virus.
29. The nucleic acid of claim 27 which is fused to a heterologous nucleic acid.
- 25 30. The nucleic acid of claim 27 which is about from 10 to 35 base pairs.
31. Duck hepatitis B virus sL173F or sL172trunc.
32. A duck infected with duck hepatitis B virus sL173F or sL172trunc.
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33. Woodchuck hepatitis virus sL173F or sAg truncated just N-terminal to sL172F.
34. A woodchuck infected with woodchuck hepatitis virus sL173F or
5 sL172trunc.
35. A vector comprising the nucleic acid of claim 26.
36. A host cell transformed with a vector of claim 35.
- 10 37. A method comprising culturing a host cell of claim 36 and recovering sL173F or sL172trunc therefrom.
38. A hepatitis B virus sAg comprising (a) isolated hepatitis B virus sL173F or
15 sL172trunc and/or (b) sL173F or sL172trunc fused to a heterologous polypeptide.
39. The sAg of claim 38 bound to a detectable label, bound to an insoluble substance, or formulated in a pharmaceutically acceptable excipient.
- 20 40. The isolated sAg of claim 38 in an infectious hepatitis B virus.
41. An antibody capable of specifically binding sL173F or sL172trunc.
42. The antibody of claim 40 bound to a detectable label, bound to an insoluble
25 substance or formulated in a pharmaceutically acceptable excipient.
43. A method for immunotherapy comprising administering to a subject the isolated sAg of claim 38.

44. A method for immunotherapy comprising administering to a subject the antibody of claim 41.

45. A method for the treatment of HBV comprising administering adefovir to a
5 subject infected with HBV, determining whether the subject is infected with HBV sL173F or sL172trunc and, if so, additionally administering to the subject a non-cross reactive anti-HBV drug.

46. The method of claim 45 wherein the adefovir and the drug are
10 administered substantially simultaneously to the subject.

47. The method of claim 45 wherein the drug is selected from the group consisting of entecavir, L-dT, MCC-478, FTC, L-dC, L-FMAU, L-Fd4C, Lamivudine and tenofovir.

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48. A method for the prevention of emergence of HBV sL173F or sL172trunc in a subject undergoing therapy for HBV comprising administering adefovir and at least one non-cross reactive anti-HBV drug.

49. The method of claim 48 wherein adefovir and the anti-HBV drug are
20 administered substantially simultaneously.

50. A diagnostic PCR kit for HBV sL173F or sL172trunc comprising primers capable of specifically amplifying an HBV rt sequence containing HBV sL173F or
25 sL172trunc.